The experiments were performed on day 7. We conducted a strategy involving: (1) Continuous infusion cystometry (CMG) under anaesthesia to record the basal pressure, threshold pressure, maximum bladder voiding pressure (MBVP) and intercontraction interval (ICI). (2) Urinary nerve growth factor (NGF) detection before CMG. (3) Western blot analysis and immunohistochemistry of CLC-3 and CLCA4 protein on rat bladder tissues. (4) Reverse transcription-polymerase chain reaction (RT-PCR) of the mRNA for CLC-3 and CLCA4 channels in normal and CYP-OAB bladder tissue. The CMG parameters, urine NGF level, molecular expressions of chloride channels are compared between rats in control, CYPc40 and CYPc80 groups.
**Results:** Repeated injection of low dose CYP (40 or 80 mg/kg) could successfully induce OAB like status in rats which was illustrated by CMG. In CYPc80 group, the bladder weight and urinary NGF increased significantly. In OAB rats (CYPc40 and CYPc80), the protein expressions of CLC-3 and CLCA4 chloride channels on bladder tissue (by western blotting) increased significantly in a dose dependent manner. The mRNA expression of CLC-3 and CLCA4 on bladder tissue (by Quantitative RT-PCR) also increased significantly in a dose dependent manner in OAB groups. Immunohistochemistry study revealed the CLC-3 and CLCA4 were located on both urothelium and smooth muscle layers of CYP-induced OAB bladder in rats. Moreover, the expression of CLC-3 and CLCA4 (both in protein and mRNA level) chloride channels on OAB rat bladder were strongly correlated with the NGF levels and CMG parameters.
**Conclusion:** Our results suggest that both the CLC-3 and CLCA4 chloride channels may play important roles in the pathogenesis of OAB and provide possible new therapeutic targets in treating OAB. Further studies are warranted.

**PD10-5:**
**IMPACT OF SURGEON CASE VOLUME ON POSTOPERATIVE COMPLICATIONS, MORTALITY, MEDICAL COSTS AND LENGTH OF HOSPITAL STAY AFTER TRANSURETHRAL RESECTION OF THE PROSTATE (TURP): A NATIONWIDE POPULATION-BASED STUDY IN TAIWAN**

Chou Chen-wei[1,2], Leonard S. Chuech[1], Tu Yuan-po[1], Hsu Fu-shun[1], Lan Tzuo-Yun[2]. [1] *Department of Urology, New Taipei City Hospital, New Taipei City, Taiwan;* [2] *Institute of public health, National Yang-Ming University, Taiwan*

**Purpose:** There were numerous volume-outcome studies during the previous decade indicating that high surgeon case volume provides better outcome in high risk operations. Conversely, surgeon case volume may play little role in some well-established operations, such as transurethral resection of the prostate (TURP), the standard surgical procedure for benign prostate hyperplasia (BPH) since 1920s. We investigate the impact of surgeon case volume on in-hospital mortality, postoperative complications, blood transfusion rate, length of hospital stay and medical expense in TURP.
**Materials and Methods:** This study used data from the National Health Insurance Research Database (NHIRD), which is provided by the Bureau of National Health Insurance in Taiwan. The study sample will be identified from the database by ICD-9-CM code from 2002 to 2012. The sample of 3381 patients who had undergone TURP for the first time was divided into low (estimated 33 cases per year or less), medium (estimated 33 to 51 cases per year) and high-volume (estimated 52 or more cases per year) surgeon groups equally. The correlations of all patient, surgeon and hospital variables with the outcomes and medical expense of TURP were analyzed.
**Results:** A total of 3381 patients underwent TURP for the first time by 430 surgeons in 185 hospitals from 2002 to 2012. The overall in-hospital mortality rate was 0.18% (6 of 3381 patients) and was not significantly different among groups. The blood transfusion rates of the low, medium and high volume surgeon group were 0.35%, 0.53%, and 0.44%, respectively ($p = 0.815$), and postoperative complication rates were 1.16%, 0.98% and 1.08% respectively ($p = 0.932$). However, TURP performed by high-volume surgeons cost 6.2% less ($1186 vs $1265, $p = 0.0004$) and resulted in shorter hospital stay (4.58 vs 5.11 days, $p < 0.0001$) compared with low-volume surgeons.
**Conclusion:** According to preliminary results, surgeon volume was associated with lower medical costs and shorter hospital stay after TURP. Surgeon volume, however, was not an independent predictor of mortality, blood transfusion rates and postoperative complication rates.

**PD10-6:**
**THE IMPACT OF PSEUDOEPHEDRINE AND ANTIHISTAMINE ON MALE LOWER URINARY TRACT SYMPTOMS**

I-Hung Shao[1], Yuan-Yun Tam[2], Chia-Chen Wu[3]. [1] *Divisions of Urology, Department of Surgery, Lotung Poh-Ai Hospital, Yilan, Taiwan;* [2] *Department of Otolaryngology, Lotung Poh-Ai Hospital, Yilan, Taiwan;* [3] *Department of Otolaryngology, Linko Chang Gung Hospital, Taoyuan, Taiwan*

**Purpose:** Pseudoephedrine and antihistamine are sympathomimetic drugs that are widely used as nasal decongestants, but both of them can also cause adverse effects including voiding dysfunction. However, the risk of developing voiding dysfunction remains uncertain in patients without subjective voiding problems.
**Materials and Methods:** We prospectively enrolled patients with nasal congestion who required treatment with pseudoephedrine in the period from August to December 2015. All of the patients denied concomitant subjective voiding problem. International prostate symptom score (IPSS) questionnaires were used to evaluate voiding function before and one week after pseudoephedrine was taken. The results of IPSS questionnaires were analyzed as a total score (IPSS-T), voiding score (IPSS-V), storage score (IPSS-S), and quality of life due to urinary symptoms (QoL-US).
**Results:** We enrolled a total of 94 male patients, with pseudoephedrine group and antihistamine group accounted for 47 patients respectively. Mean age of each groups were 38.9 and 42.9 y/o in pseudoephedrine and antihistamine respectively. The mean age, initial IPSS-T, IPSS-V, and IPSS-S score of both group showed no significant difference. The IPSS-T, IPSS-V, and IPSS-S scores increased slightly after pseudoephedrine was taken (IPSS-T from 5.47 to 5.96, IPSS-V from 2.83 to 3.19, and IPSS-S from 2.68 to 2.77), while all change showed no significant difference. In antihistamine group, the score changed were as followed: IPSS-T from 6.00 to 6.66, IPSS-V from 2.30 to 2.96, and IPSS-S from 3.70 to 3.74. In this group, the IPSS-V score increased significantly after taking antihistamine (p value = 0.015). The urinary symptom related quality of life of both groups did not differ significantly after taking pseudoephedrine and antihistamine.
**Conclusion:** Comparing to pseudoephedrine, antihistamine treatment for nasal congestion may increase the risk of voiding dysfunction in those without subjective voiding symptoms.

## *Podium-11*
## *Urinary tract infection*

**PD11-1:**
**EARLY SURGICAL INTERVENTION WITHIN 15 HOURS RESULTS IN SURVIVAL BENEFIT IN PATIENTS WITH FOURNIER'S GANGRENE**

Tsung-Yen Lin[1], Chien-Hui Ou[2], Wen-Horng Yang[2], Yat-Ching Tong[2], Hong-Lin Cheng[2], Yuh-Shyan Tsai[2], Yu-Sheng Cheng[2], I-Hung Cheng[1], Yung-Ming Lin[2]. [1] *Division of Urology, Department of Surgery, National Cheng Kung University Hospital Dou-Liou Branch, Taiwan;* [2] *Department of Urology, Medical College and Hospital, National Cheng-Kung University, Tainan, Taiwan*

**Purpose:** Fournier's gangrene (FG) is a life-threatening disease and the reported mortality rates range from 7.5 to 45%. Given the high mortality rate in those patients, emergent surgical intervention is always needed. To date, only a handful of the studies explored the effect of intervention time on disease survival. The aim of this study is to determine the optimal time for surgical intervention, which might provide better prognosis.
**Materials and Methods:** From 1979 to 2015, a total of 95 patients diagnosed as FG in National Cheng Kung University Hospital were retrospectively reviewed. Patients' demographics, laboratory parameters at initial diagnosis, Fournier's gangrene severity index (FGSI) and simplified FGSI, time interval between the time of arriving emergency room (ER) and the time of starting surgery were recorded. All of the patients received aggressive surgical intervention. The patients were divided into survival

and non-survival groups, and the time interval between the two groups was analyzed. A cut-off time interval was then used to subdivide our patients into early and delayed intervention groups. All parameters were compared between the two groups.
**Results:** Based on simplified FGSI, the mortality rate was 0% in score 0, 5.88% in score 1, 6.25% in score 2, 30.77% in score 3, 28.57% in score 4, 40% in score 5, 60% in score 6, 100% in score >7. Thirty patients with score between 3 and 6 were further investigated. The mean time interval between ER and OR in survivors (917.11 ± 1008.68 mins) was significant lower than non-survivors (1379.55 ± 903.9 mins) ($P = 0.00$). Then we defined 15 hours as cut-off time interval and those 30 patients were subdivided into early (n = 17) and delayed (n = 13) groups. Basic characteristics, laboratory parameter at initial diagnosis, FGSI and simplified FGSI were not significantly different between these two groups. The mortality rate was significantly lower in early intervention group (17.65%) compared to delayed group (61.54%) ($P = 0.034$).
**Conclusion:** Early surgical intervention within 15 hours can decrease mortality rate up to 44% in selected patients of Fournier's gangrene who had relatively intermediate risk of mortality.

**PD11-2:**
**LESSONS LEARNED FROM 40 URETHROPLASTIES FOR URETHRAL STRICTURES**

Ta-Min Wang, Yang-Jen Chiang, Hsiao-Wen Chen, Sheng-Hsien Chu, Kuan-Lin Liu, Hsu-Han Wang, Kou-Jen Lin. *Division of General Urology and Renal Transplantation, Department of Surgery, Linkou Chang Gung Memorial Hospital, Chang Gung University, Taoyuan, Taiwan*

**Purpose:** To report our 8-year experience with open urethroplasty for treatment of urethral strictures.
**Materials and Methods:** From 2007 through 2015, 40 patients (mean age 36.6 years) underwent open urethroplasty for urethral reconstruction. Twenty-seven patients had posterior urethral stricture and 13 had anterior urethral stricture. Preoperative evaluation of the urethral stricture included a simultaneous retrograde urethrogram and/or cystogram. The mean estimated preoperative real length of the urethral disruption or obliteration was 2.69 ± 0.97 cm (rang 1.5 to 5.5 cm). Excision and primary anastomosis (EPA) for 4 anterior urethral strictures and buccal mucosa graft augmented urethroplasty for 9 anterior urethral strictures were performed. Transperineal bulbo-membranous anastomosis was performed for 27 posterior urethral strictures.
**Results:** The results were successful in 23 (85%) cases of posterior urethral stricture and 13 (100%) cases of anterior urethral stricture. Postoperative evaluation included voiding cystourethrography, urethroscopy, and uroflow study. Voiding cystourethrography performed postoperatively demonstrated a wide, patent anastomosis in all but three cases. The mean peak flow rate at the last follow-up visit was 18.1 ± 6.5 ml/s. Four patients developed recurrent urethral strictures. The negative results were related to incomplete excision of fibrotic posterior urethra in 2 cases, an anastomotic tension due to long distraction defect in 2 cases.
**Conclusion:** From our limited experience, buccal mucosa graft augmented urethroplasty and EPA are reliable methods in management of anterior urethral stricture**.** The essential operative techniques of posterior urethroplasty included complete excision of scar tissue involving the membranous urethral region, and creation of tension free mucosa to mucosa repair.

## *Pediatrics*

**PD11-3:**
**ROUTINE UROFLOWMETRY AND POST-VOID RESIDUAL URINE IN PRIMARY NOCTURNAL ENURESIS**

Chao-Tse Hung [1,2], Stephen S. Yang [1,2], Shang-Jen Chang [1,2]. [1] *Division of Urology, Taipei Tzu Chi Hospital, New Taipei, Taiwan;* [2] *School of Medicine, Buddhist Tzu Chi University, Hualien, Taiwan*

**Purpose:** To examine the results of routine uroflowmetry and postvoid residual urine (PVR) in children with primary nocturnal enuresis (PNE).
**Materials and Methods:** Children with PNE underwent two sets of uroflowmetry and PVR by transabdominal ultrasound. Uroflowmetry pattern were reported as ICCS classification. Elevated PVR is defined as >20 ml in children aged 4–6 years, and >10 ml in children aged 7–12 years, respectively.
**Results:** Totally, 82 children with a mean age of aa ± bb years were enrolled for study. Boy to girl ratio was cc: dd. Of the first 82 uroflowmetry curves 52 (63.4%) and 30 (36.6%) were bell and non-bell shaped, respectively. Of the 30 non-bell shaped curves 6 (25.0%) were normal at repeat uroflowmetry test. Finally, repeat staccato curves were observed in 12 chidren, tower in 8, plateau in 2, intermittent in 1, and obstructive in 1.
Mean value of first PVR was aa ± bb ml. First PVR was elevated in 27 (32.9%) children of whom second PVR was normal in 21 (77.8%) children. Of the 6 children with repeated elevated PVR 4 had bell-shaped uroflowmetry curves and 2 had non-bell shaped curves. Finally, Repeat abnormal uroflowmetry curves and/or repeat elevated PVR were noted in 27 (32.9%) children. Repeat uroflowmetry and PVR tests may avoid 25% and 77.8% unnecessary invasive urodynamic tests, respectively.
**Conclusion:** Routine uroflowmetry and postvoid residual urine examinations are recommended in children with primary nocturnal enuresis because potential lower urinary tract dysfunction was observed in one third of children with PNE. Repeat uroflowmetry and PVR tests are recommended to avoid unnecessary invasive urodynamic tests.

**PD11-4:**
**EXPERIENCE OF MINI-LAPAROSCOPIC PYELOPLASTY IN INFANT AND CHILDREN SINGLE INSTITUTION EXPERIENCE**

Chi-Wen Lo, Shang Jen Chang, Chia-Da Lin, Yao-Chou Tsai, Shei-Dei Yang. *Divisions of Urology, Department of Surgery, Taipei Tzu Chi Hospital, New Taipei, Taiwan*

**Purpose:** We investigate the feasibility and the result of mini-laparoscopic pyeloplasty in our hospital since 2005.
**Materials and Methods:** A total 7 patients aged from 43 days to 17 years old were enrolled in our retrospective review. The persisting symptoms (pain, stone, infection) and obvious deteriorated renal function were the indication for surgical intervention. The etiology, surgical finding, surgical method, operation time, number and size of troca, complication, admission days were all enrolled in our retrospective study.
**Results:** The average age of patients was 6.0 ± 5.3 year-old with average following up period 51.9 ± 35.6 years. The hospital days were 6.1 ± 1.8 days. The average operation time was 292.9 ± 56.3 minutes with minimal blood loss (all < 50 ml). There was only one complication recorded (Post operative urosepsis, with pre-operation finding of pyuria). The complication rate was 14.3% (1 in 7 patients). The post operation following up revealed no hydronephrosis nor obstructive finding in the DTPA scan.
**Conclusion:** The Mini-laparoscopic surgery brings excellent surgical result and is not inferior to the golden standard open surgery in our hospital experience in cosmetic and surgical result.

**PD11-5:**
**STANDARD UROTHERAPY WAS EFFECTIVE IN CHILDREN WITH PRIMARY NOCTURNAL ENURESIS AND LARGE MAXIMAL VOIDED VOLUME**

Chiung-Hui Peng [1,2], Shang-Jen Chang [1,2], Stephen S. Yang [1,2], Chi-Wen Lo [1,2]. [1] *Division of Urology, Taipei Tzu Chi Hospital, New Taipei, Taiwan;* [2] *School of Medicine, Buddhist Tzu Chi University, Hualien, Taiwan*

**Purpose:** A recent randomized control failed to show the benefits of standard urotherapy in children with primary nocturnal enuresis (PNE). Herein, we correlated the results of urotherapy and maximal voided volume (MVV) in children with PNE.
**Materials and Methods:** Children with PNE recorded frequency volume chart (FVC) for 48 hours, and underwent two sets of uroflowmetry and postvoid residual urine (PVR). Number of wet nights was recorded before and after urotherapy for at least 7 days. Standard urotherapy for 4 weeks and treatment outcomes were in accordance with the recommendation of ICCS.